Title	***APG Accelerator Systems Preliminary Proposals: SPX***			
Project Requestor	Katherine Harkay, Yong-chul Chae, Yuelin Li, Vadim Sajaev, Chun-xi Wang, Marion White			
Date	April 7, 2008			
Group Leader(s)	Katherine Harkay			
Machine or Sector Manager	Louis Emery			
Category	Accelerator R&D			
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*This row is filled in automatically on check in to ICMS. See Note [1]

Description:

Start Year (FY)	**FY09**	**Duration (Yr)**	**4**

Objectives:

Propose ideas that reduce risk, potentially reduce cost, or contribute to building-up and nurturing APS ultrafast user community

Benefit:

Reduce risk. Potentially reduce cost. Nurture APS ultrafast user community by providing a means to develop ultrafast detectors and test with transient short x-ray pulses.

Risks of Project: See Note [2]

Same as SPX project as a whole: medium

Consequences of Not Doing Project: See Note [3]

Lose opportunity to commission first ps-scale capability at hard x-ray source

Cost/Benefit Analysis: See Note [4]

Aim to decrease cost/risk; improve benefit/cost ratio

Description:

1. Evaluate 4°K operation for lower deflecting voltage (2-4 MV)
2. Evaluate 2-cell cavity design, damp undamped parasitic modes using tuned cavity
3. Complete deflecting cavity lattice studies for longer straights
4. Build-up and nurture ultrafast science community by developing alternate transient schemes for short bunches or short pulses to enable development and test of fast detectors

See Accelerator Physics Technical Note: K. Harkay et al., "APS Renewal Plan: Accelerator System Preliminary Proposals," ASD/APG/2008-02 (Apr 2, 2008)

Funding Details

Cost: ($K)
Use FY08 dollars.

Year	AIP	Contingency
1		
2		
3		
4		
5		
6		
7		
8		
9		
Total	0	

Contingency may be in dollars or percent. Enter figure for total project contingency.

Effort: (FTE)
The effort portion need not be filled out in detail by March 28

Year	Mechanical Engineer	Electrical Engineer	Physicist	Software Engineer	Tech	Designer	Post Doc	Total
1								0
2								0
3								0
4								0
5								0
6								0
7								0
8								0
9								0

Notes:

[1] **ICMS**. Check in first revision to ICMS as a *New Check In*. Subsequent revisions should be checked in as revisions to that document i.e. C*heck Out* the previous version and C*heck In* the new version. Be sure to complete the *Document Date* field on the check in screen.

[2] **Risk Assessment.** Advise of the potential impact to the facility or operations that may result as a consequence of performing the proposed activity. Example: If the proposed project is undertaken then other systems impacted by the work
include ... (If no assessment is appropriate then enter NA.)

[3] **Consequence Assessment.** Advise of the potential consequences to the facility or to operations if the proposal is not executed. Example: If the proposed project is not undertaken then ____ may happen to the facility. (If no assessment is appropriate then enter NA.)

[4] **Cost Benefit Analysis.** Describe cost efficiencies or value of the risk mitigated by the expenditure. Example: Failure to complete this maintenance project will result in increased total costs to the APS for emergency repairs and this investment of ___ will also result in improved reliability of ____. (If no assessment is appropriate then enter NA.)